

THAT WHICH IS CLAIMED IS:

1. An ignition system for a vehicle comprising:

an ignition coil having primary and secondary windings for generating high voltage signals to spark plugs;

an electronic control module (ECM) that generates a signal;

a distributor having a reluctor assembly that generates a signal; and

an ignition module for receiving a signal from the electronic control module (ECM) and said reluctor assembly, said ignition module including a microprocessor for generating a control signal to the ignition coil and switching ON and OFF the primary current therein and reducing the duty cycle as applied to the control signal from the ignition module to the ignition coil.

2. An ignition system according to Claim 1, and further comprising an armature and shaft assembly mounted within the distributor, wherein said ignition module is mounted on the distributor.

3. An ignition system according to Claim 1, wherein the microprocessor is operative for reducing the duty cycle from about 5% to about 15%.

4. An ignition system according to Claim 1, and further comprising a temperature sensing circuit operative with the microprocessor for establishing a temperature control signal that is linear with temperature change in the ignition module.

5. An ignition system according to Claim 1, wherein the microprocessor is operative for determining a timing interval for switching ON and OFF the primary current within the ignition coil.

6. An ignition system according to Claim 1, wherein the microprocessor within the ignition module is operative for determining when an engine threshold has been exceeded by sensed processing engine operating parameters.

7. An ignition system according to Claim 1, wherein the microprocessor within the ignition module is operative for reducing the duty cycle after the temperature threshold has been exceeded and when the engine RPM of the vehicle has dropped below a predetermined number.

8. An ignition system for a vehicle comprising:

- an ignition coil having primary and secondary windings for generating high voltage signals to spark plugs;

- an electronic control module (ECM) that generates a signal;

- a distributor having a reluctor assembly that generates a signal; and

- an ignition module for receiving the signal from the electronic control module (ECM) including a bypass and electronic spark timing signal (EST) and the signal from said reluctor assembly, said ignition module including a microprocessor for generating a control signal to the ignition coil and switching ON and OFF the primary current therein and reducing the

duty cycle as applied to the control signal from the ignition module to the ignition coil.

9. An ignition system according to Claim 8, and further comprising an armature and shaft assembly mounted within the distributor, wherein said ignition module is mounted on the distributor.

10. An ignition system according to Claim 8, wherein the microprocessor is operative for reducing the duty cycle from about 5% to about 15%.

11. An ignition system according to Claim 8, and further comprising a temperature sensing circuit operative with the microprocessor for establishing a temperature control signal that is linear with temperature change in the ignition module.

12. An ignition system according to Claim 8, wherein the microprocessor is operative for determining a timing interval for switching ON and OFF the primary current within the ignition coil.

13. An ignition system according to Claim 8, wherein the microprocessor within the ignition module is operative for determining when an engine threshold has been exceeded by sensed processing engine operating parameters.

14. An ignition system according to Claim 8, wherein the microprocessor within the ignition module is operative for reducing the duty cycle after the temperature threshold has been exceeded and when the

engine RPM of the vehicle has dropped below a predetermined number.

15. A method of operating an ignition system of a vehicle having an electronic control module (ECM) comprising the steps of:

monitoring an ignition module that receives a spark output (SPOUT) signal from an electronic control module and generates a control signal to an ignition coil for switching ON and OFF the primary current therein; and

reducing the duty cycle as applied to the control signal from the ignition module to the ignition coil and reducing the heat generated by the ignition module.

16. A method according to Claim 15, and further comprising the step of receiving a bypass signal and electronic spark timing signal.

17. A method according to Claim 15, and further comprising the step of generating the control signal from a microprocessor positioned within the ignition module.

18. A method according to Claim 15, and further comprising the step of mounting the ignition module on a distributor of the vehicle.

19. A method according to Claim 15, and further comprising the step of reducing the duty cycle from about 5% to about 15%.

20. A method according to Claim 15, and further comprising the step of sensing temperature within the ignition module for determining when the temperature threshold for the ignition module has been exceeded.

21. A method according to Claim 15, and further comprising the step of sensing current within a temperature sensing circuit for determining when the temperature threshold has been exceeded.

22. A method according to Claim 21, wherein the temperature sensing circuit comprises a temperature sensing resistor.